



INNOVATIVE GERMAN QUALITY

BENUTZERHANDBUCH

DUAL DRIVE NETWORK CENTER

EXTERNAL REMOVABLE DUAL NETWORK HARD DRIVE / 3.5" / GIGABIT LAN / USB 2.0 HOST

Sehr geehrte Benutzerin, sehr geehrter Benutzer,

herzlichen Dank, dass Sie sich für das **Freecom Dual Drive Network Center** entschieden haben. Dass Freecom Dual Drive Network Center bietet Ihnen leicht zu verwendende Netzwerkspeicher-Möglichkeiten und die Möglichkeiten, das Gerät als DLNA/UPnP Media Server und als Torrent Download Client zu verwenden.

Bitte beachten Sie, dieses Handbuch ist eine allgemeine Anleitung, die für mehrere Freecom-Produkte verwendet wird. Die dargestellten Produktbilder in diesem Handbuch können vom Gerät abweichen, das Sie gekauft haben.

Freecom Technologies GmbH • Germany
www.freecom.com

Verpackungsinhalt

Bitte prüfen Sie den Inhalt der Verpackung. Alle Artikel die mitgeliefert werden, sind auf der Rückseite der Verpackung aufgelistet.



Brauchen Sie Hilfe? Haben Sie Fragen?

Haben Sie Fragen zur Benutzung dieses Produkts, suchen Sie Informationen zu anderen Freecom-Produkten oder benötigen Sie fachliche Unterstützung, so wenden Sie sich bitte an die Freecom-Kundendienststelle Ihres Landes. Weitere Informationen dazu finden Sie auf www.freecom.com.

Freecom bietet Ihnen unbegrenzten und kostenfreien Helpdesk-Support.



Achtung!

Alle Rechte vorbehalten. Im Rahmen des Handbuches genannte Produktbezeichnungen dienen nur Identifikationszwecken und können Warenzeichen oder eingetragene Warenzeichen der entsprechenden Firmen sein. Dieses Gerät ist für den Büro- und Heimbereich konzipiert.

Dieses Gerät ist eine Einrichtung nach EN 55022 Klasse B.

Freecom übernimmt keine Haftung für Schäden jeglicher Art, für Datenverluste oder daraus resultierende Folgeschäden (einschließlich, ohne Einschränkung, Schäden aufgrund Geschäftsverlust, Geschäftsunterbrechung, Verlust von Geschäftsinformationen oder anderer finanzieller Schäden) die bei der Nutzung dieses Freecom-Produkts entstehen bzw. durch fehlerhafte Bedienung des Freecom Produktes entstehen. Dies gilt auch dann, wenn Freecom über die Möglichkeit solcher Schäden informiert worden ist.

Änderungen im Sinne des technischen Fortschritts sind vorbehalten.

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Allgemeine Informationen

Die folgenden Hardware- und Softwarevoraussetzungen müssen erfüllt sein, um einen fehlerfreien Betrieb zu gewährleisten.

Systemvoraussetzungen

Für den Einsatz des Freecom Dual Drive Network Center werden folgende Komponenten benötigt:

PC:

- Intel Pentium III / AMD Duron 900 MHz oder höher
- 256 MB RAM (Vista/7: 512 MB RAM) oder höher
- CD-ROM Laufwerk
- LAN (1000Base-T Full Duplex-Verbindung empfohlen)
- Internetanbindung zur Online-Registrierung der Garantie und dem Herunterladen aktueller Software
- Betriebssystem: Windows XP, Windows Vista, Windows 7

Mac:

- PowerPC G4/G5 oder Intel Mac
- 256 MB RAM oder höher
- CD-ROM Laufwerk
- LAN (1000Base-T Full Duplex-Verbindung empfohlen)
- Internetanbindung zur Online-Registrierung der Garantie und dem Herunterladen aktueller Software
- Betriebssystem: Mac OS X v10.4 oder höher

Zur sofortigen Anwendung ist Ihr Freecom Dual Drive Network Center vorformatiert und als RAID 0 konfiguriert. Dadurch haben Sie den maximalen Speicherplatz zur Verfügung. Sollten Sie Wert auf maximale Datensicherheit legen, empfehlen wir Ihnen die Konfiguration als RAID 1. Im Modus "RAID 1" werden Ihre Festplatten gespiegelt, dadurch steht Ihnen nur die Hälfte des Speicherplatzes zur Verfügung. Sollte eine Festplatte ausfallen, können Ihre Daten von der zweiten Festplatte wiederhergestellt werden. Weitere Informationen zur Festplattenkonfiguration finden Sie in diesem Handbuch im Kapitel "Konfiguration der Festplatten".

Vorsichtsmaßnahmen

Um einen fehlerfreien Betrieb Ihres Freecom Dual Drive Network Center zu gewährleisten, beachten Sie bitte die folgenden Hinweise. Falls diese Hinweise nicht berücksichtigt werden, kann die Garantie Ihres Freecom Dual Drive Network Center erlöschen und das Gerät beschädigt werden.

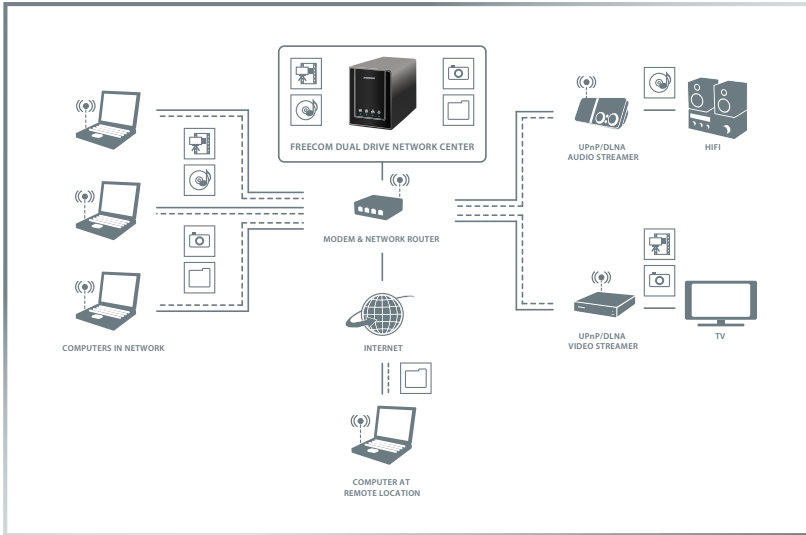
- Lassen Sie das Freecom Dual Drive Network Center nicht fallen und vermeiden Sie andere plötzliche mechanische Schläge, da dies zu Datenverlusten und Beschädigungen des Gerätes führen kann.
- Betreiben Sie das Freecom Dual Drive Network Center nur im Temperaturbereich von 10-35°C.
- Falls das Freecom Dual Drive Network Center aus einer kalten in eine wärmere Umgebung gebracht wird, nehmen Sie das Gerät erst in Betrieb, nachdem es sich allmählich auf Zimmertemperatur erwärmt hat. Ansonsten kann es durch die Bildung von Kondenswasser zu Funktionsbeeinträchtigungen kommen.
- Flüssigkeiten dürfen nicht in Kontakt mit dem Freecom Dual Drive Network Center geraten. Wenn Flüssigkeiten verschüttet werden und diese in Kontakt mit der Elektronik innerhalb des Gerätes kommen, kann dies zu Schäden am Gerät und zur Funktionsbeeinträchtigung führen.
- Benutzen Sie das Freecom Dual Drive Network Center nicht in feuchter Umgebung. Feuchtigkeit innerhalb des Gerätes kann die enthaltene Elektronik beschädigen und zur Funktionsbeeinträchtigung führen.
- Wird das Freecom Dual Drive Network Center unsachgemäß geöffnet, verfällt die Garantie.
- Bitte benutzen Sie nur das vorgegebene Original-Netzteil.



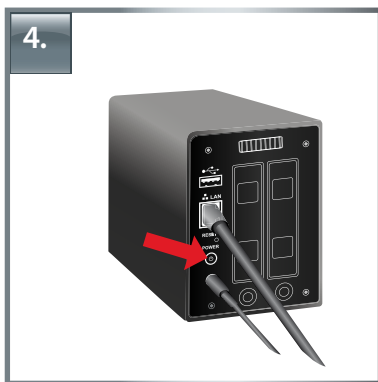
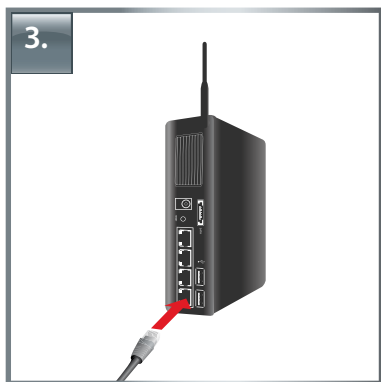
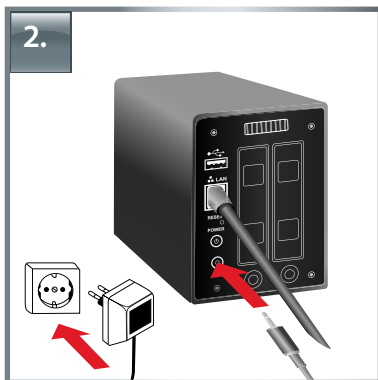
Benötigen Sie während der Installation und/oder Konfiguration Ihres Dual Drive Network Center einmal Hilfe oder haben Sie Fragen, so wenden Sie sich bitte an die Freecom-Kundendienststelle Ihres Landes. Weitere Informationen dazu finden Sie auf www.freecom.com.

Freecom bietet Ihnen unbegrenzt kostenfreie Helpdesk-Unterstützung.

Freecom Dual Drive Network Center - Setupübersicht



Kapitel: Hardwareinstallation



1. Verbinden Sie den Stecker des Schnittstellenkabels* mit dem Freecom Dual Drive Network Center.
2. **Optional:** Verbinden Sie das Stromkabel mit dem Freecom Dual Drive Network Center und stecken Sie das Netzteil in die Steckdose.
3. Verbinden Sie das andere Ende des Schnittstellenkabels-Kabels* mit einem Netzwerk-Router.
Bitte beachten Sie: Ihr Router muss als DHCP-Server konfiguriert sein. Weitere Informationen, wie Sie die DHCP-Server-Funktion Ihres Routers einrichten, finden Sie im Handbuch Ihres Routers.
4. **Optional:** Verfügt Ihr Gerät über einen Netzschalter, dann müssen Sie das Gerät vor Benutzung einschalten.

* Bitte benutzen Sie das Schnittstellen-Kabel Ihres Gerätes (z.B. USB, eSATA, Firewire, LAN) für den Anschluss an den PC / Mac.

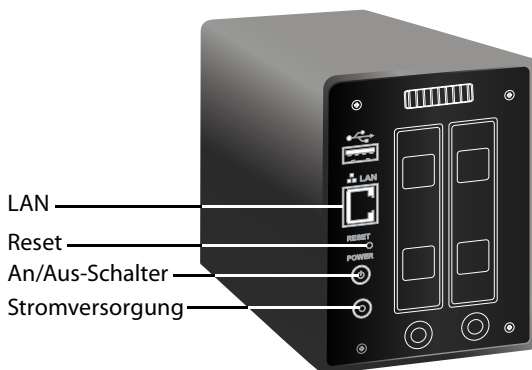
Beschreibung der LEDs

	An	Blinkend	Rot	Aus
1. LED: HDD 1	Formatierte HDD	x	Unformatierte HDD	x
2. LED: HDD 2	Formatierte HDD	x	Unformatierte HDD	x
3. LED: Netzwerk	Netzwerkverbindung	x	x	Keine Netzwerkverbindung
4. LED: Power	Normal Modus	Datenzugriff	Systemfehler	Gerät aus



"Power"-Schalter

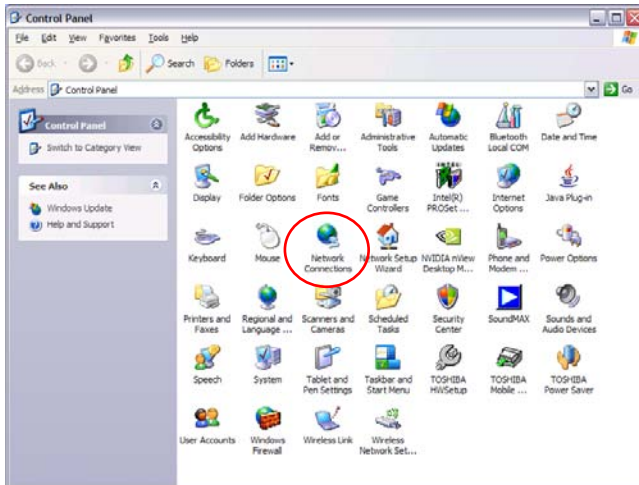
Schalten Sie bitte das Freecom Dual Drive Network Center ab, wenn Sie es nicht benutzen. Dies spart Strom und schont die eingebauten Festplatten. Der "Power"-Schalter befindet sich auf der Rückseite des Freecom Dual Drive Network Center.



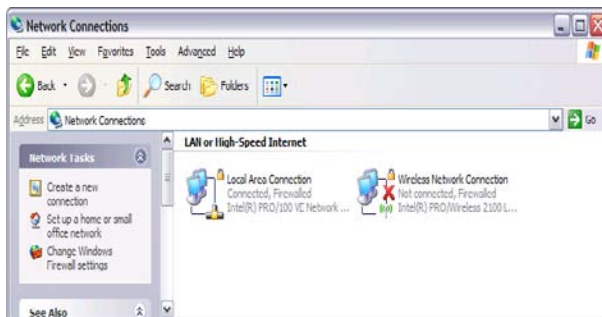
Kapitel: Benutzung der LAN-Verbindung

Überprüfung der TCP/IP-Einstellungen in Windows XP

1. Öffnen Sie "Start" -> "Einstellungen" -> "Systemsteuerung".

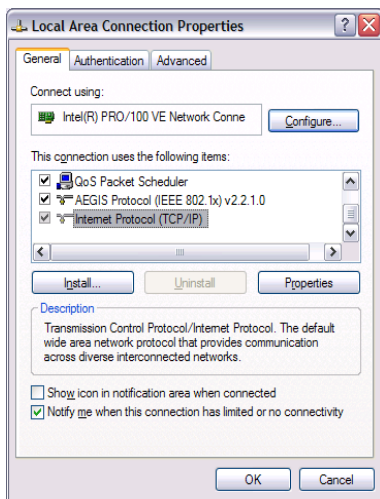


2. Doppelklicken Sie auf "Netzwerkverbindungen".

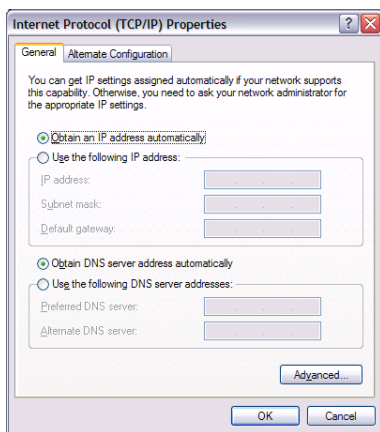


3. Rechtsklicken Sie auf Ihre "LAN-Verbindung" und wählen Sie "Eigenschaften".

- Das folgende Fenster öffnet sich. Markieren Sie "Internetprotokoll (TCP/IP)" und klicken Sie auf "Eigenschaften".

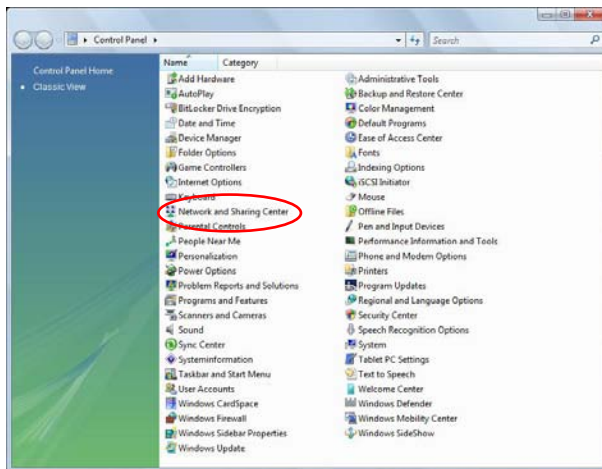


- Wählen Sie im "Allgemein" Tab "IP-Adresse automatisch beziehen" und "DNS-Serveradresse automatisch beziehen".

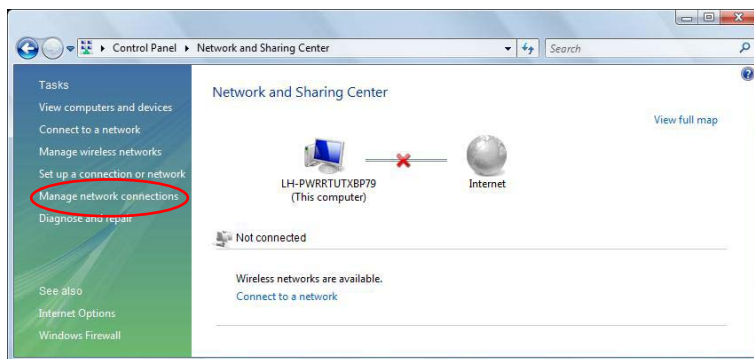


Überprüfung der TCP/IP-Einstellungen in Windows Vista/7

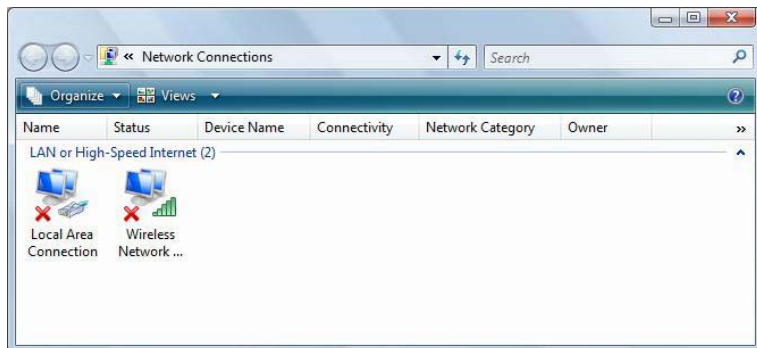
1. Öffnen Sie "Eigenschaften" -> "Network and Sharing Center".



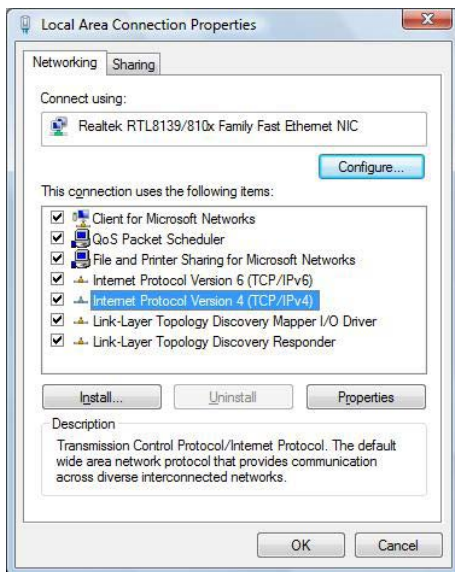
2. Klicken Sie auf "Manage Network Connections".



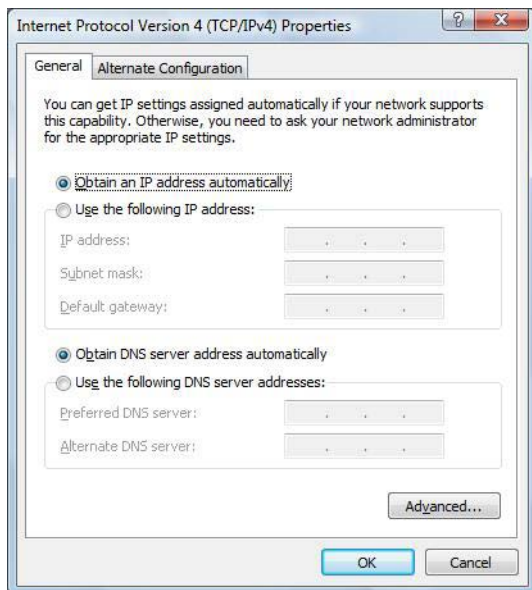
- Rechtsklicken Sie auf "LAN-Verbindung" und wählen Sie "Eigenschaften".



- Im "Networking" Tab wählen Sie "Internetprotokoll Version 4 (TCP/IPv4)" und klicken auf "Eigenschaften".



- Wählen Sie im "Allgemein" Tab "IP-Adresse automatisch beziehen" und "DNS-Serveradresse automatisch beziehen".

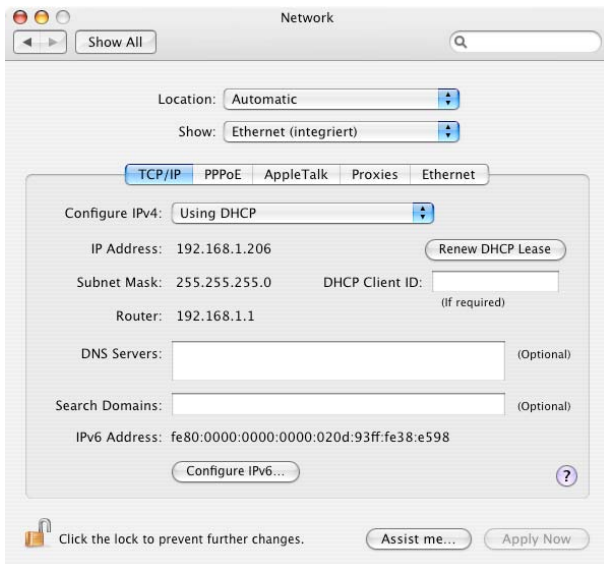


Überprüfung der TCP/IP-Einstellungen in Mac OS X

- Öffnen Sie "Systemeinstellungen" -> "Netzwerk".



2. Im "TCP/IP" Tab wählen Sie "DHCP" in den "IPv4 konfigurieren" Einstellungen.



Kapitel: Software Installation

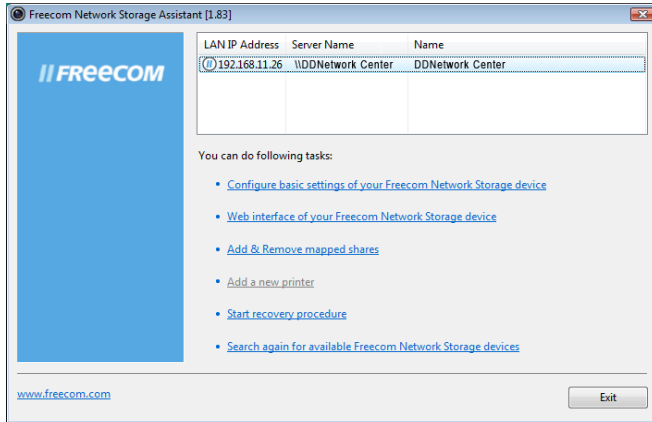
Installation der Freecom Network Storage Assistant - Software (PC)

Der Freecom Network Storage Assistant dient der schnellen Erkennung und grundlegenden Einrichtung Ihres Freecom Dual Drive Network Center. Wenn er ausgeführt wird, zeigt er Ihnen alle in Ihrem Netzwerk verfügbaren Freecom Dual Drive Network Center an und unterstützt Sie beim Erstellen von Netzwerkordnern.

1. Legen Sie die Manual & Application CD in Ihr CD/DVD-Laufwerk ein. Sie enthält Benutzerhandbücher und Anwendungssoftware, inklusive dem "Freecom Network Storage Assistant". Sobald die CD eingelegt wurde, sollte automatisch ein Fenster auf dem Bildschirm erscheinen. Sollte dies nicht der Fall sein, fahren Sie bitte wie folgt fort:
2. Öffnen Sie den "Arbeitsplatz".
3. Doppel-klicken Sie auf das CD-Laufwerk, in welches die CD eingelegt wurde. Der Startbildschirm sollte sich nun öffnen.



4. Klicken Sie auf "Software Installation" -> "FNS Assistant". Die Installation startet jetzt. Folgen Sie den Anweisungen auf dem Bildschirm und bestätigen Sie mit "Weiter", um die Installation fortzusetzen. Nachdem die Installation beendet wurde, klicken Sie auf "Quit", um den Menübildschirm zu verlassen.
5. Starten Sie den "Freecom Network Storage Assistant" durch Doppel-Klick auf das "FNSA"-Symbol auf Ihrem Desktop oder über "Start" -> "Programme".
6. Überprüfen Sie im FNSA, ob Ihr Freecom Dual Drive Network Center vom System erkannt wurde. Die Erkennung kann einige Zeit dauern. Sollte Ihr Freecom Dual Drive Network Center nicht sofort erkannt werden, klicken Sie auf "Search again for available Freecom Network Storage devices", um die Suche nach dem Freecom Dual Drive Network Center zu wiederholen.



7. Für eine genaue Funktionsbeschreibung des Freecom Network Storage Assistant schauen Sie bitte im Kapitel "Der Freecom Network Storage Assistant" nach.

Installation der Freecom Network Storage Assistant - Software (Mac)

Der Freecom Network Storage Assistant dient der schnellen Erkennung und grundlegenden Einrichtung Ihres Freecom Dual Drive Network Center. Wenn er ausgeführt wird, zeigt er Ihnen alle in Ihrem Netzwerk verfügbaren Freecom Dual Drive Network Center an und unterstützt Sie beim Erstellen von Netzwerkordnern.

1. Legen Sie die Manual & Application CD in Ihr CD/DVD-Laufwerk ein. Sie enthält Benutzerhandbücher und Anwendungssoftware, inklusive dem "Freecom Network Storage Assistant".
2. Auf dem "Schreibtisch" Ihres Macs erscheint ein CD-Icon.
3. Doppel-klicken Sie auf das CD-Icon. Klicken Sie auf "Start". Der Startbildschirm sollte sich nun öffnen.



4. Klicken Sie auf "Software Installation" -> "FNS Assistant". Die Installation startet jetzt. Folgen Sie den Anweisungen auf dem Bildschirm und bestätigen Sie mit "Weiter", um die Installation fortzusetzen. Nachdem die Installation beendet wurde, klicken Sie auf "Quit", um den Menübildschirm zu verlassen.
5. Starten Sie den Freecom Network Storage Assistant. Diesen finden Sie unter "Programme" -> "Dienstprogramme".
6. Überprüfen Sie im FNSA, ob Ihr Freecom Dual Drive Network Center vom System erkannt wurde. Die Erkennung kann einige Zeit dauern. Sollte Ihr Freecom Dual Drive Network Center nicht sofort erkannt werden, klicken Sie auf "Search again for available Freecom Network Storage devices", um die Suche nach dem Freecom Dual Drive Network Center zu wiederholen.
7. Für eine genaue Funktionsbeschreibung des Freecom Network Storage Assistant schauen Sie bitte im Kapitel "Der Freecom Network Storage Assistant" nach.

Kapitel: Zugriff auf das Freecom Dual Drive Network Center

Zugriff auf Daten via SMB

Server Message Block (SMB) funktioniert als Netzwerkprotokoll, das hauptsächlich dazu verwendet wird, den Zugriff auf Dateien zwischen verschiedenen Knoten eines Netzwerks freizugeben.

Windows

Öffnen Sie den Windows Explorer und geben Sie entweder

\\ddnetworkcenter* oder

\\IP_ADRESSE in die Adresszeile ein (IP_ADRESSE ist die IP-Adresse Ihres Freecom Dual Drive Network Center).



Sollten Sie den Host-Namen oder die IP-Adresse geändert haben, verwenden Sie bitte die neuen Einstellungen.

Geben Sie Benutzernamen und Passwort ein, um auf das Freecom Dual Drive Network Center zuzugreifen. Wenn Sie sich als Administrator einloggen, haben Sie Zugriff auf alle Ordner des Freecom Dual Drive Network Center.

Linux

Öffnen Sie den Datei-Browser (z.B. Konqueror) und geben Sie entweder

smb://ddnetworkcenter* oder

smb://IP_ADRESSE in die Adresszeile ein (IP_ADRESSE ist die IP-Adresse Ihres Freecom Dual Drive Network Center).

Mac OS

Mac OS X 10.4 und höher

Wählen Sie "Gehe zu" -> "Mit Server verbinden ..." in der Menüleiste. Die Adresse des Freecom Dual Drive Network Center ist:

smb://ddnetworkcenter* oder

smb://IP_ADRESSE in die Adresszeile ein (IP_ADRESSE ist die IP-Adresse Ihres Freecom Dual Drive Network Center).

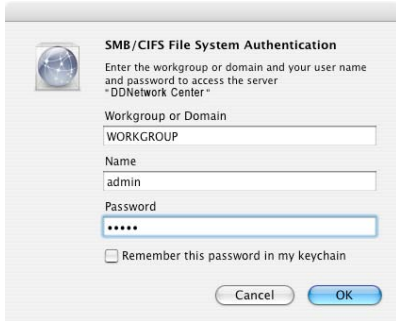


* Werkseinstellung. Sollten Sie den Hostnamen oder die IP-Adresse geändert haben, verwenden Sie bitte die neuen Einstellungen.

Klicken Sie auf "Verbinden". Geben Sie den Arbeitsgruppennamen sowie Benutzername und Passwort ein, um auf das Freecom Dual Drive Network Center zuzugreifen. Wenn Sie sich als Administrator einloggen, haben Sie Zugriff auf alle Ordner des Freecom Dual Drive Network Center.



Bemerkung: Den Arbeitsgruppennamen des Freecom Dual Drive Network Center definieren Sie unter Setup - System im Freecom Dual Drive Network Center Konfigurationsmenü.



Mac OS X 10.4

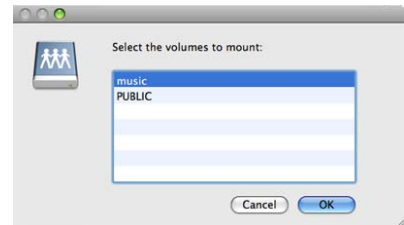


Mac OS X 10.5

Wählen Sie im nächsten Schritt einen freigegebenen Ordner und klicken Sie auf OK, um fortzufahren. Nachdem Sie "OK" gedrückt haben, ist die Konfiguration beendet und ein Symbol erscheint auf Ihrem Computer Desktop.



Mac OS X 10.4

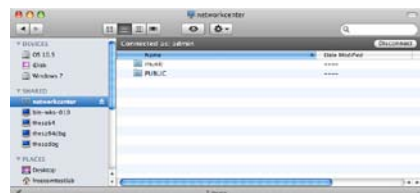


Mac OS X 10.5

Um auf alle Ordner des Freecom Dual Drive Network Center zuzugreifen, für die der von Ihnen gewählte Benutzer Zugriffsberechtigungen hat, doppel-klicken Sie einfach auf dieses Symbol.



Mac OS X 10.4



Mac OS X 10.5

Zugriff auf Daten via FTP



Bemerkung: nicht alle Browser können zum Upload von Daten via FTP verwendet werden. Browser, die dies unterstützen sind z.B. Internet Explorer und Konqueror. Wir empfehlen die Verwendung einer FTP-Client Software wie z.B. WS_FTP, SmartFTP oder CuteFTP.

Das File Transfer Protocol (FTP) ist ein Standard-Netzwerkprotokoll, das verwendet wird, um Dateien über ein TCP/IP-Computernetzwerk auszutauschen. Das FTP-Protokoll basiert auf einer Client-Server-Architektur.

Lokaler Zugriff

Aktivieren Sie die "FTP Server"-Option. Verwenden Sie eine FTP-Client Software oder öffnen Sie Ihren Browser und geben Sie

`ftp://USERNAME:USERPASSWORD@IP_ADDRESS *`

oder

`ftp://USERNAME:USERPASSWORD@ddnetworkcenter *`

ein ("IP_ADDRESS" ist die IP-Adresse Ihres Freecom Dual Drive Network Center).

FTP-Zugriff über das Internet

Aktivieren Sie die "FTP-Server" Option in der Konfiguration des Freecom Dual Drive Network Center.

Ihr Router muss wie folgt konfiguriert sein:

1. Portweiterleitung

Leiten Sie Port 21 auf die IP-Adresse Ihres Freecom Dual Drive Network Center weiter.

* Wenn Sie den Hostnamen oder die IP-Adresse des Freecom Dual Drive Network Center geändert haben, verwenden Sie bitte die neuen Einstellungen hier.

2. Dynamic DNS

Das "Dynamic Domain Name System" gibt Ihnen die Möglichkeit, einen offiziellen DNS-Namen wie z.B. `www.yourname.com` auf die dynamische IP-Adresse weiterzuleiten, die Sie von Ihrem Internetanbieter erhalten haben.

Um dies zu machen, müssen Sie sich zuerst bei einem DynDNS-Anbieter registrieren. Dieser aktualisiert geänderte IP-Adressen und leitet Sie an den entsprechenden Domain-Namen weiter. Dies ermöglicht Ihnen, immer unter einem Domain-Namen erreichbar zu sein, selbst wenn sich Ihre IP-Adresse ändert.

Wenn Ihr Router dieses Merkmal unterstützt, empfehlen wir die Verwendung dieser Option. Ansonsten müssen Sie immer die WAN IP-Adresse Ihres Routers kennen, um auf das Freecom Dual Drive Network Center über FTP aus dem Internet zuzugreifen.

Verwenden Sie eine "FTP-Client" Software oder öffnen Sie Ihren Browser und geben Sie

`ftp://USERNAME:USERPASSWORD@YOUR_INTERNET_IP`

oder

`ftp://USERNAME:USERPASSWORD@YOUR_DYNDNS_HOST.`

ein.

USERNAME = Ihr Benutzername

USERPASSWORD = Ihr Benutzerpasswort

YOUR_INTERNET_IP = Ihre WAN IP-Adresse

YOUR_DYNDNS_HOST = Ihre DynDNS-Adresse

Kapitel: Konfiguration des Freecom Dual Drive Network Center

Der Freecom Network Storage Assistant

Sie können den "Freecom Network Storage Assistant" zur Konfiguration des Freecom Dual Drive Network Center verwenden. Dieses Tool bietet die folgenden Funktionen:

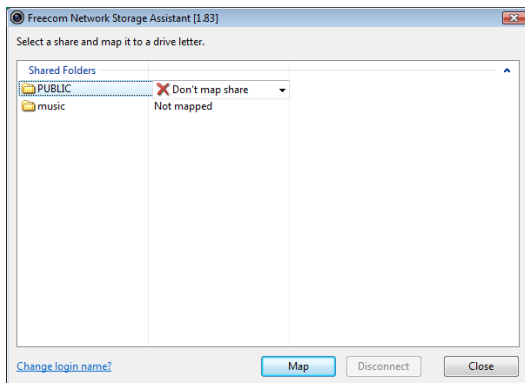


Zugriff aufs Freecom Dual Drive Network Center Webinterface

Wenn Sie auf diesen Menüpunkt klicken, öffnet sich das Webinterface des Freecom Dual Drive Network Center in Ihrem Standardbrowser.

Hinzufügen und Entfernen freigegebener Ordner

Sie können freigegebenen Ordnern auf Ihrem Freecom Dual Drive Network Center Laufwerksbuchstaben zuweisen. Dies ermöglicht Ihnen einen schnelleren Zugriff auf Ihre Daten.



Suche nach verfügbaren Freecom Dual Drive Network Centers wiederholen

Klicken Sie hier, um die Suche nach Ihrem Freecom Dual Drive Network Center zu wiederholen, wenn es nicht während der ersten Suche erkannt wurde. Stellen Sie sicher, dass Sie Ihr Netzwerk wie in diesem Handbuch beschrieben konfiguriert haben und dass alle Kabel richtig angeschlossen sind.

Setzen Sie sich mit dem Freecom Support Center in Verbindung, wenn alle Kabel angeschlossen sind, Ihr Gerät aber nach mehreren Versuchen trotzdem nicht erkannt wird.

Kapitel: Freecom Dual Drive Network Center Funktionen

Dieser Abschnitt beschreibt die Funktionen Ihres Freecom Dual Drive Network Center.

Login

Verwenden Sie den "Freecom Network Storage Assistant", um das Webinterface Ihres Dual Drive Network Center zu öffnen oder starten Sie Ihren Browser und geben Sie

<http://ddnetworkcenter>

ein, um das Webinterface zu öffnen.

Ein Login-Fenster öffnet sich:

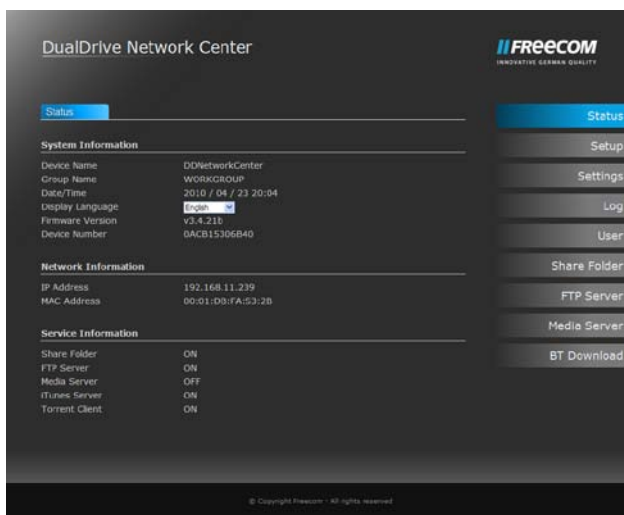
Bitte verwenden Sie folgenden Benutzernamen und Passwort, um sich das erste Mal

einzu-loggen: Benutzername: admin

Passwort: admin

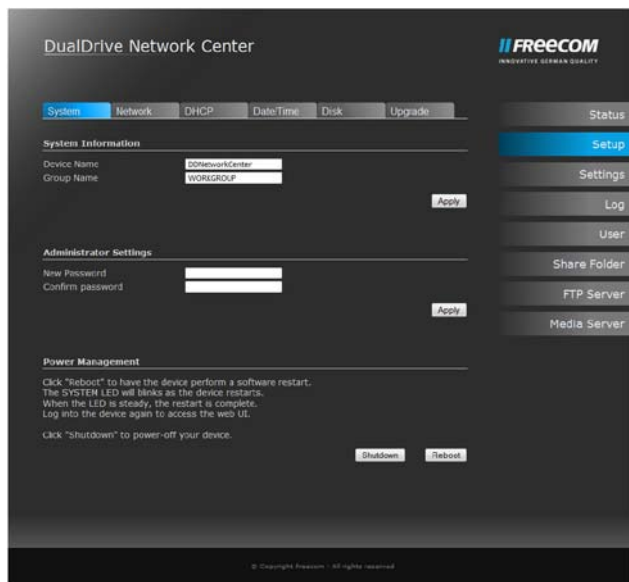
Status

Wenn Sie diese Option auswählen, wird Ihnen eine Übersicht über Ihre Geräte- und Netzwerkeinstellungen sowie der Festplattenstatus angezeigt:



Setup

Der Abschnitt "Setup" ermöglicht die Konfiguration der Grundeinstellungen Ihres Freecom Dual Drive Network Center.



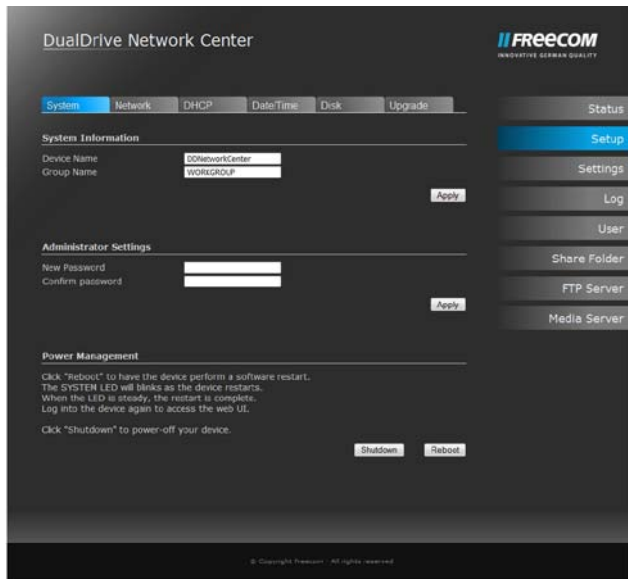
Die folgenden Einstellungen können im Untermenü "System" konfiguriert werden:

- Geräte- und Arbeitsgruppenname ändern unter dem Menüpunkt System
- Administratorpasswort ändern unter dem Menüpunkt System
- Das Gerät kann heruntergefahren werden oder ein Neustart veranlasst werden unter dem Menüpunkt System
- Konfiguration der Netzwerkeinstellungen unter dem Menüpunkt Network
- Konfiguration eines DHCP Servers unter dem Menüpunkt DHCP
- Einstellung von Datum und Uhrzeit unter dem Menüpunkt Date/Time
- Konfiguration von RAID und JBOD unter dem Menüpunkt Disk
- Systemfirmware aktualisieren unter dem Menüpunkt Upgrade

System

Die folgenden Einstellungen können im Untermenü "System" konfiguriert werden:

- Gerätename
- Arbeitsgruppenname
- Administratorpasswort



Gerät-/Arbeitsgruppennamen aktualisieren

Gehen Sie auf Setup -> System

Hier können Sie unter System Information den Gerätenamen und den Namen der Arbeitsgruppe, in der sich Ihr Freecom Dual Drive Network Center befindetet, ändern.

Neuer Name

Wenn Sie den Namen des Freecom Dual Drive Network Center ändern, kann Ihr Gerät unter http://NEW_NAME erreicht werden (NEW_NAME steht für den Namen, den Sie dem Gerät gegeben haben).

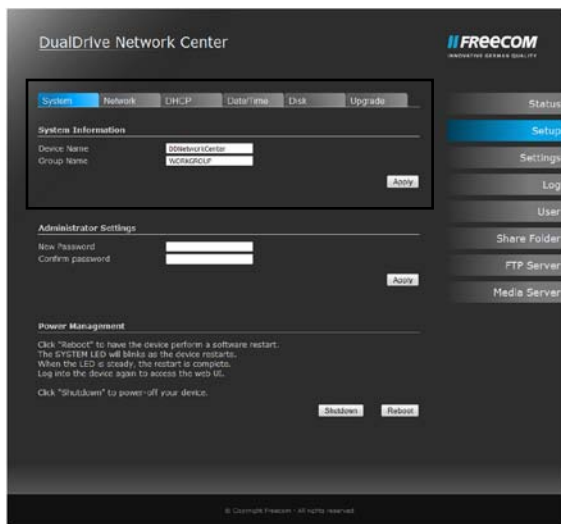
Die maximale Länge des Gerätenamens beträgt 15 Zeichen. Nur die Zeichen A-Z, a-z und 0-9 sind erlaubt.

Neue Arbeitsgruppe

Hier können Sie den Namen der Arbeitsgruppe ändern, in der sich Ihr Gerät befindet.

Die maximale Länge des Arbeitsgruppennamens beträgt 15 Zeichen. Nur die Zeichen A-Z, a-z und 0-9 sind erlaubt.

Klicken Sie auf "Apply", nachdem Sie die Einstellungen geändert haben. Ihr Freecom Dual Drive Network Center wird neugestartet, um die Einstellungen zu übernehmen.



DualDrive Network Center

Freecom

System Network DHCP Date/Time Disk Upgrade

System Information

Device Name: DualDrive Center

Group Name: WORKGROUP

Apply

Administrator Settings

New Password:

Confirm password:

Apply

Power Management

Click "Reboot" to have the device perform a software restart.
The SYSTEM LED will blink as the device restarts.
When the LED is steady, the restart is complete.
Log into the device again to access the web UI.

Click "Shutdown" to power off your device.

Shutdown Reboot

Status

Setup

Settings

Log

User

Share Folder

FTP Server

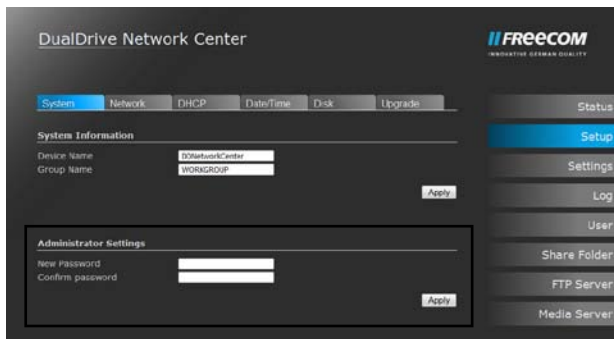
Media Server

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Administratorpasswort ändern

Hier können Sie Ihr Administratorpasswort ändern. Bitte geben Sie das neue Passwort ein und wiederholen Sie das neue Passwort im zweiten Feld.

Sollten Sie Ihr Administratorpasswort vergessen haben, setzen Sie Ihr Gerät auf Werkseinstellungen wie in Kapitel "Wiederherstellungsverfahren (Recovery) starten" beschrieben zurück.



DualDrive Network Center

Freecom

System Network DHCP Date/Time Disk Upgrade

System Information

Device Name: DualDrive Center

Group Name: WORKGROUP

Apply

Administrator Settings

New Password:

Confirm password:

Apply

Status

Setup

Settings

Log

User

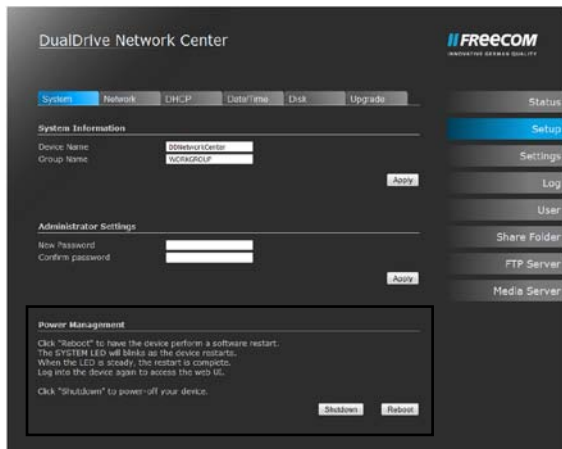
Share Folder

FTP Server

Media Server

Power Management

Hier können Sie das Gerät über das Webinterface herunterfahren oder neustarten, wenn Sie mit dem Mauszeiger auf den Shutdown Button (herunterfahren) bzw. den Reboot Button (neustarten) klicken.

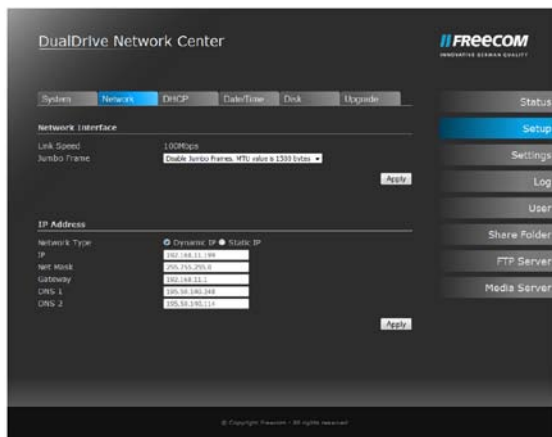


Konfiguration der Netzwerkeinstellungen

Gehen Sie auf Setup -> Network

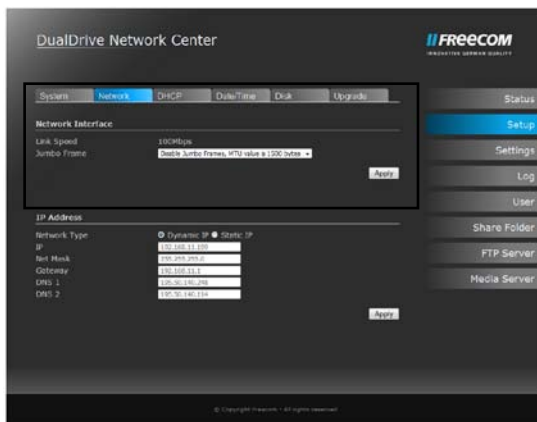
Die folgenden Einstellungen können im Untermenü "Network" konfiguriert werden:

- Größe der Jumbo Datenpakete
- Konfiguration der Netzwerkeinstellungen



Network Interface

Unter Network Interface können Sie die Größe der Jumbo Datenpakete wählen. Sie können die Netzwerkeinstellungen entweder manuell oder automatisch vornehmen.

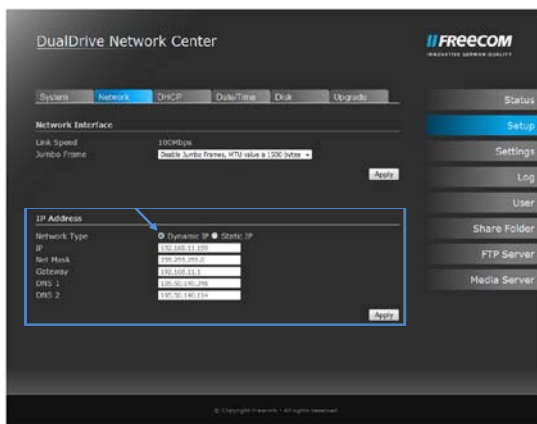


Achtung: Die Änderung der Größe der Jumbo Frames empfehlen wir nur erfahrenen Anwendern.

Automatische Konfiguration

Wenn Sie "Dynamic IP" auswählen, wird Ihr Freecom Dual Drive Network Center automatisch eine IP-Adresse von einem DHCP-Server (im Normalfall Ihr Router) beziehen.

Im ersten Schritt wählen Sie bitte "Dynamic IP" aus und klicken Sie auf "Apply", um die Änderungen zu übernehmen. Anschließend wird Ihr Freecom Dual Drive Network Center neu gestartet.



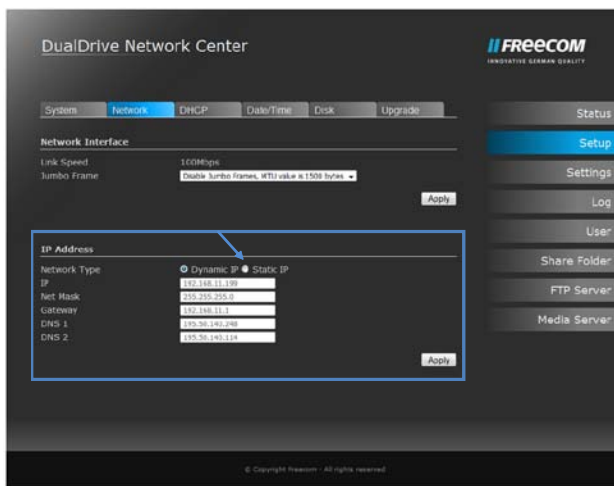
Manuelle Konfiguration



Achtung: verwenden Sie die manuelle Konfiguration nicht, wenn Sie sich nicht sicher sind, was hier zu tun ist.

Die manuelle Konfiguration ermöglicht es Ihnen, Ihr Freecom Dual Drive Network Center mit einer statischen IP-Adresse zu konfigurieren.

Im ersten Schritt wählen Sie bitte "Static IP" aus und klicken Sie auf "Apply", um die Änderungen zu übernehmen. Anschließend wird Ihr Freecom Dual Drive Network Center neu gestartet.



DualDrive Network Center

System **Network** DHCP Date/Time Disk Upgrade

Link Speed: 100Mbps
Jumbo Frame: Double Jumbo Frames, 8192 octets & 1518 bytes

IP Address

Network Type: ☒ Dynamic IP ☐ **Static IP**

IP: 192.168.11.100
Net Mask: 255.255.255.0
Gateway: 192.168.11.1
DNS 1: 192.168.1.100
DNS 2: 192.168.1.100

Apply

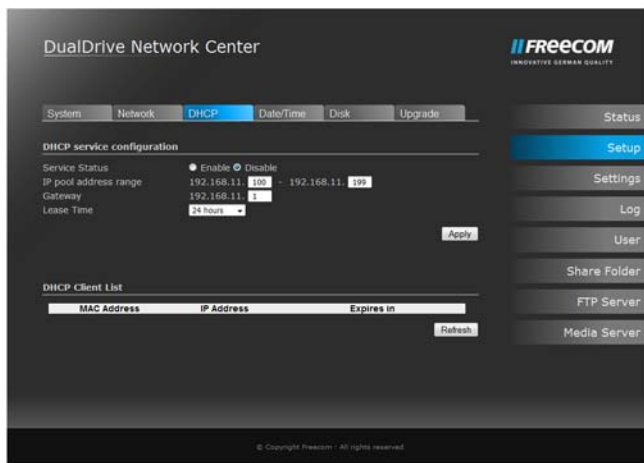
© Copyright Freecom - All rights reserved.

Konfiguration des DHCP Servers

Gehen Sie auf Setup -> DHCP

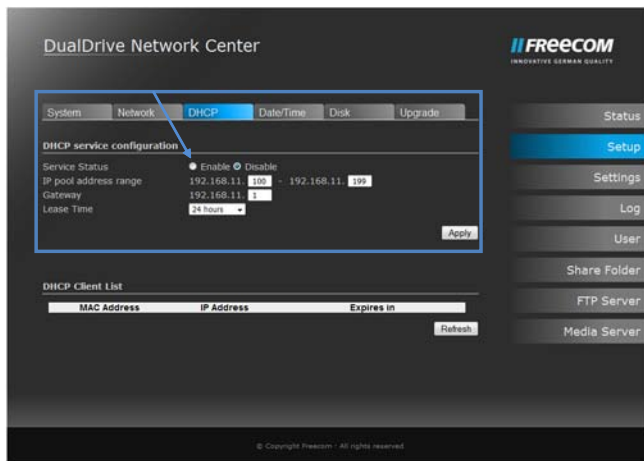
Die folgenden Einstellungen können im Untermenü Punkt DHCP konfiguriert werden:

- Konfiguration des DHCP Servers
- Verwaltung der Clients



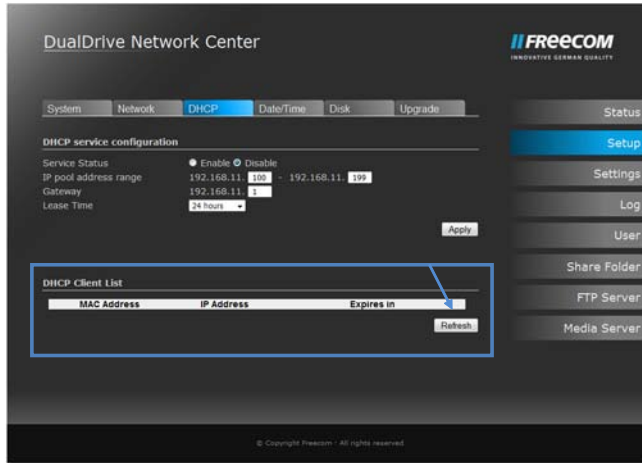
DHCP Server

Um den DHCP Server einzuschalten, müssen Sie "Enable" auswählen. Wählen Sie nun den Addressbereich des DHCP Servers aus und geben Sie das Standard Gateway an. Die Lease Time bestimmt, wie lange eine IP-Adresse für einen Client reserviert bleibt. Klicken Sie auf "Apply", um die Änderungen zu übernehmen.



DHCP Client List

DHCP Client List zeigt Ihnen alle Clients an, die auf den DHCP Server zugreifen wenn Sie auf "Refresh" klicken. Zusätzlich werden Ihnen die MAC- und IP Adressen der Clients sowie die verbleibende Lease Time pro Client angezeigt.

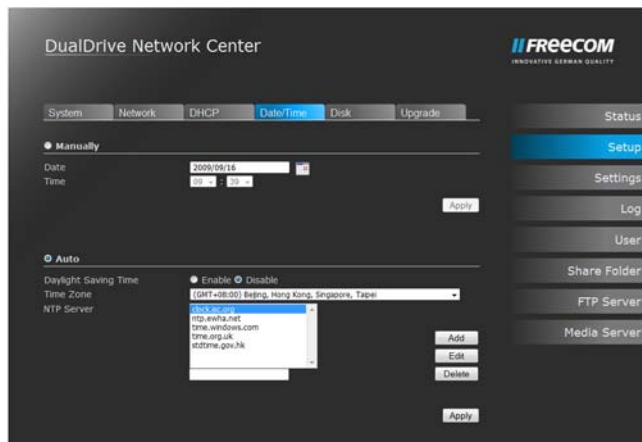


Konfiguration von Datum und Uhrzeit

Gehen Sie auf Setup -> Date/Time

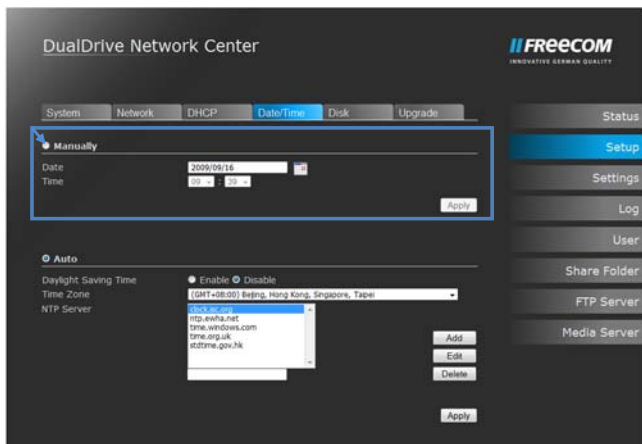
Die folgenden Einstellungen können im Untermenü "Date/Time" konfiguriert werden:

- Manuelle Einstellung von Datum und Uhrzeit
- Automatische Einstellung von Datum und Uhrzeit



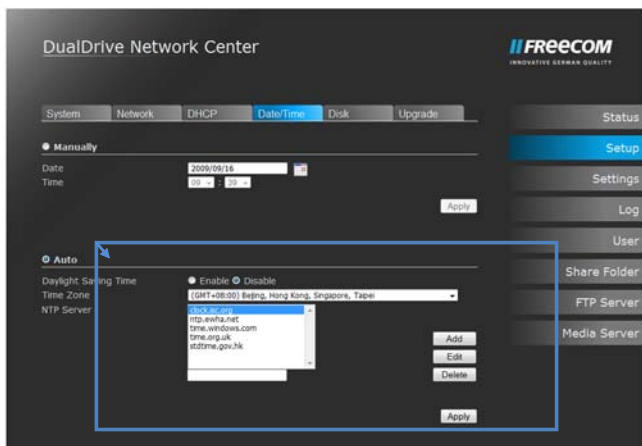
Manuelle Einstellung

Wählen Sie "Manually" aus um Datum und Uhrzeit manuell einzugeben. Klicken Sie auf "Apply", um die Änderungen zu übernehmen.



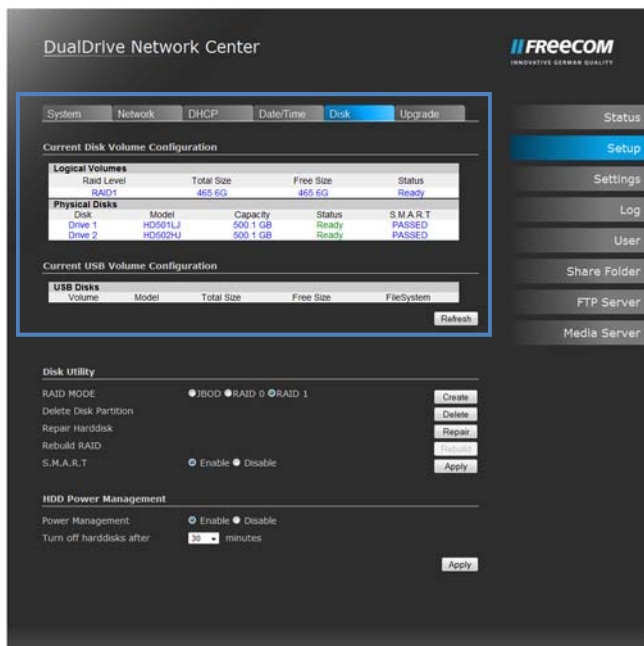
Automatische Einstellung

Wählen Sie "Auto", "Enable" und Ihre Zeitzone unter Time Zone, damit das Gerät selber die Zeit einstellt. Klicken Sie auf "Apply", um die Änderungen zu übernehmen.



Konfiguration der Festplatten

Gehen Sie auf Setup -> Disk



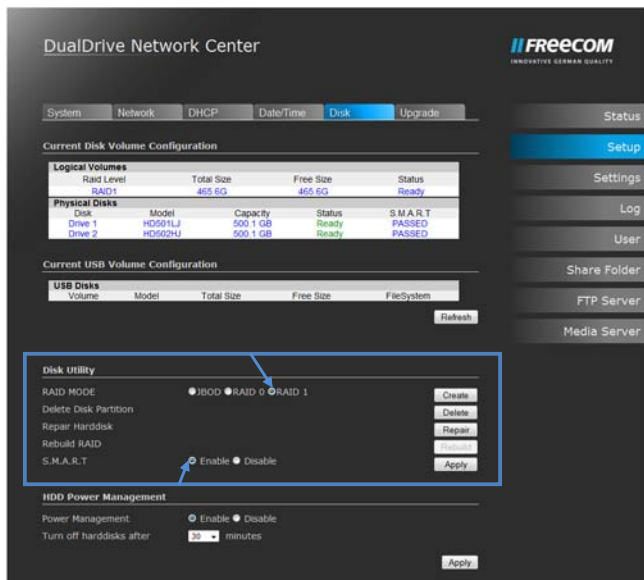
Current Disk Volume Configuration/Current USB Volume Configuration

Hier wird Ihnen eine Übersicht der logischen und physischen Laufwerke und die aktuelle Organisation Ihrer logischen Laufwerke angezeigt. Die Übersicht wird aktualisiert, wenn Sie auf "Refresh" klicken.

Disk Utility

Hier können Sie die Organisation Ihrer logischen Laufwerke auswählen, indem Sie z.B. "RAID 1" wählen.

Wählen Sie ein Organisationsschema und entweder S.M.A.R.T "Enable" oder "Disable". S.M.A.R.T steht für Self-Monitoring, Analysis and Reporting Technology und überwacht Ihren Festplattenbetrieb. Klicken Sie nun auf "Create", um Ihr gewünschtes Organisationsschema anzulegen.



RAID Modi

Sie können die Festplatten Ihres Dual Drive Network Center in verschiedenen RAID-Modi konfigurieren:

JBOD: Im diesem Modus werden die Festplatten Ihres Dual Drive Network Center als einzelne Laufwerke eingerichtet.

RAID 0: Im Modus "RAID 0" werden die Festplatten Ihres Dual Drive Network Center zusammengefasst und Daten werden immer abwechselnd auf beide Festplatten verteilt. Daraus ergibt sich der Vorteil, dass das Lesen und Schreiben wesentlich schneller möglich ist, als bei einzelnen Festplatten. Der Nachteil dieses Modus ist jedoch dass, wenn eine der beiden Festplatten ausfällt, alle Daten auf dem Dual Drive Network Center verloren sind.

RAID 1: Wenn Sie den Modus "RAID 1" verwenden, werden alle Daten der ersten Festplatte auf die zweite Festplatte gespiegelt. Daraus ergibt sich, dass nur noch die Hälfte des Gesamtspeicherplatzes Ihres Dual Drive Network Center nutzbar ist. Der Vorteil ist jedoch die hohe Datensicherheit, da alles doppelt abgespeichert wird. Bei Ausfall einer der beiden Festplatten sind Ihre Daten weiterhin von der zweiten Festplatte nutzbar.

HDD Power Management

Die Festplatten können so konfiguriert werden, dass Sie nach einer bestimmten Zeit heruntergefahren wird, wenn Sie nicht verwendet wird. Dies spart Energie und erhöht die Lebensdauer der Festplatte. Standardmäßig ist diese Option deaktiviert.

Aktivieren/deaktivieren Sie das Power Management durch Enable/Disable. Wählen Sie anschließend aus dem Pull-Down-Menü die Zeit, nach der die Festplatte in den Ruhezustand versetzt wird. Sie können die folgenden Einstellungen auswählen:

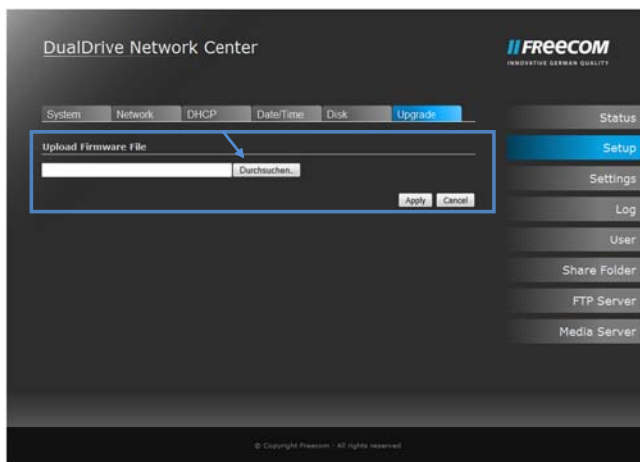
- 10 min
- 20 min
- 30 min
- 60 min
- 120 min

Update der Firmware

Gehen Sie auf Setup -> Upgrade

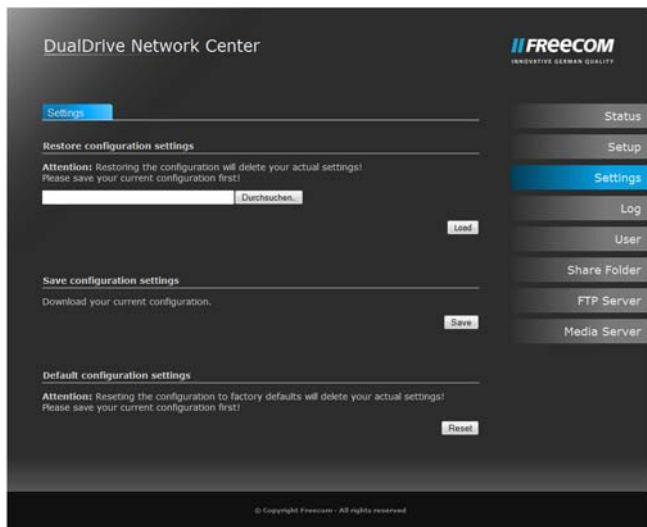
Upgrade

Klicken Sie auf "Durchsuchen" und wählen Sie die heruntergeladene Datei von <http://www.freecom.com> aus. Mit Klicken auf "Apply" wird die neue Firmware installiert. Das Gerät startet sich danach neu.



Neue Firmware behebt normalerweise Fehler und erweitert die Funktionen Ihres Dual Drive Network Centers. Überprüfen Sie auf <http://www.freecom.com>, ob neue Firmwareaktualisierungen vorhanden sind.

Settings



Der Abschnitt "Settings" ermöglicht das Laden, die Speicherung und das Zurücksetzen von Konfigurationseinstellungen.

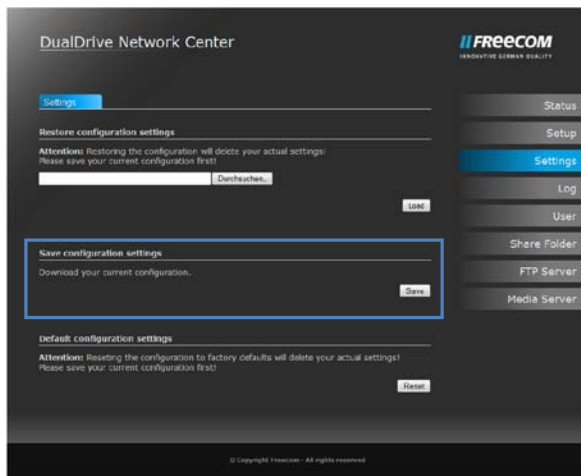
Konfiguration sichern

In diesem Menü können Sie die aktuelle Konfigurationsdatei auf Ihrem Computer abspeichern.

Nach dem Klicken der Schaltfläche "Save" wird der Name der Konfigurationsdatei generiert. Klicken Sie auf den Namen der Datei, um diese zu speichern.

Konfiguration wiederherstellen

Klicken Sie auf "Durchsuchen", wählen Sie die zuvor gespeicherte Bin Datei aus und klicken Sie auf "Load" um Ihre gespeicherten Einstellungen wiederherzustellen.

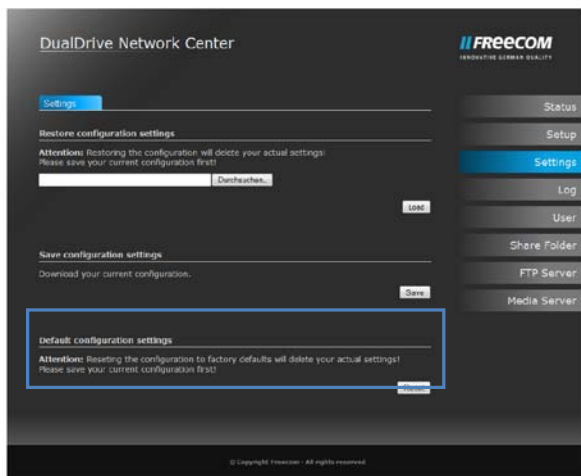


Zurücksetzen auf Werkseinstellungen

Klicken Sie auf "Reset", um das Gerät auf Werkseinstellung zurückzustellen.

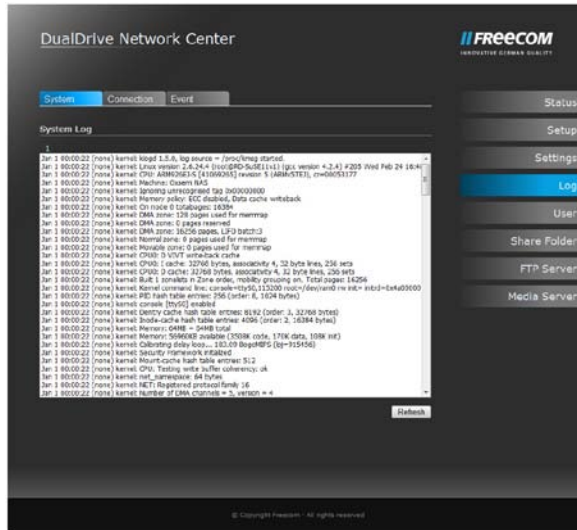


Achtung: Alle zuvor getätigten Einstellungen gehen verloren.





Log

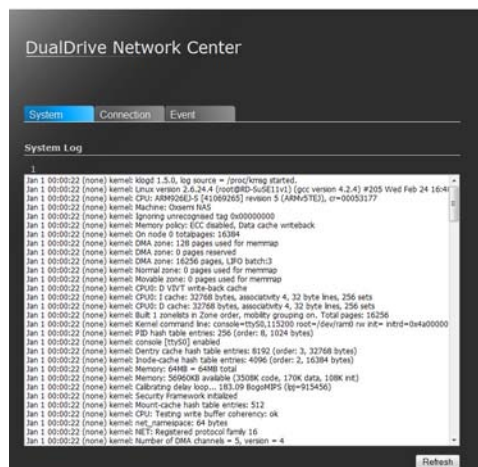


Der Abschnitt "Log" zeigt Ihnen eine Übersicht über die Systemvorgänge an.

System Log - Übersicht des Kernel Log

Gehen Sie auf Log -> System

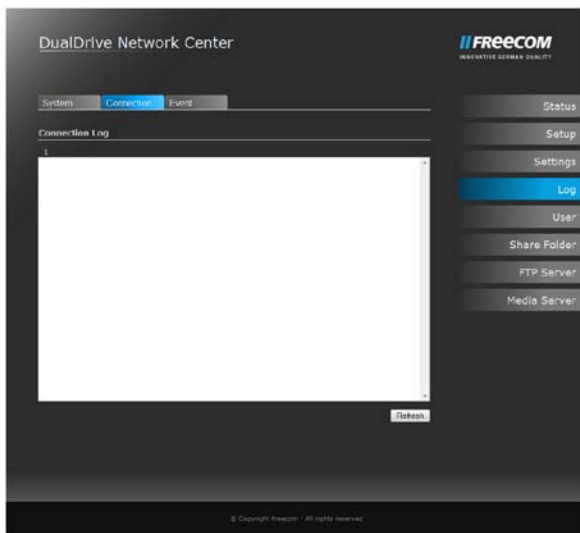
Im Kernel Log werden alle Ereignisse bezüglich des Kernels angezeigt.



Connection Log - Verbindungslog

Gehen Sie auf Log -> Connection

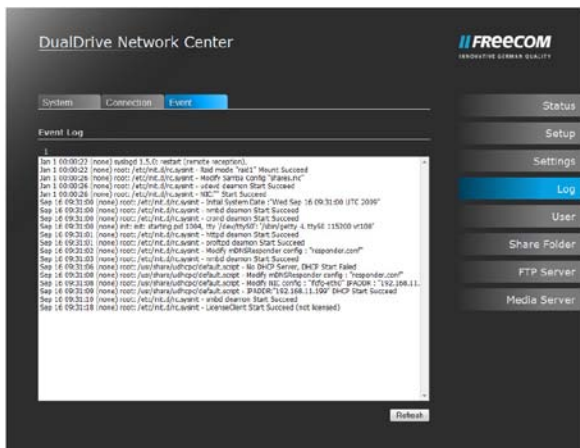
Im Connection Log werden alle FTP Connection Verbindungsereignisse angezeigt.



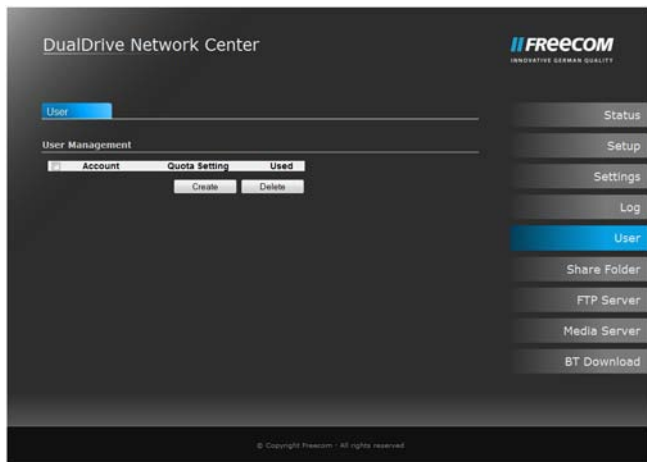
Event Log - Übersicht des Event Log

Gehen Sie auf Log -> Event

Im Event Log werden alle Serviceereignisse (z.B. Samba) angezeigt.



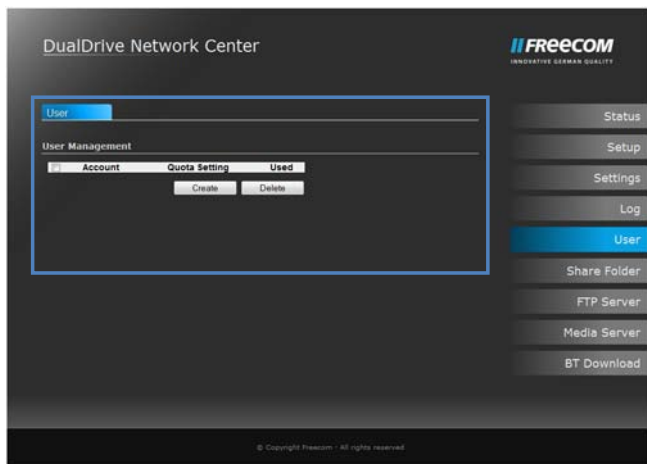
User (Benutzerverwaltung)



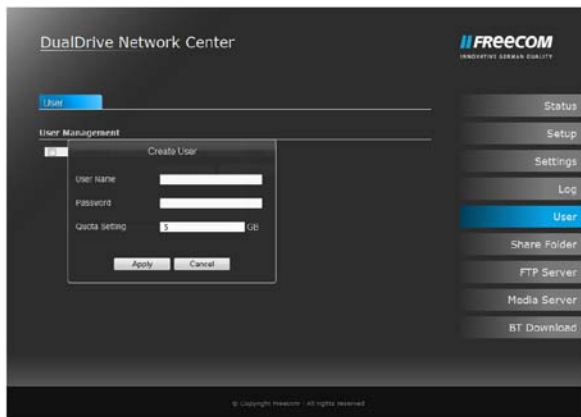
Der Abschnitt "User" zeigt Ihnen eine Übersicht über alle Benutzerkonten, über die verbrauchte Speicherkapazität und gibt Ihnen die Möglichkeit, neue Benutzer hinzu zufügen.

User anlegen

Um einen neuen Benutzer anzulegen, klicken Sie auf "Create".



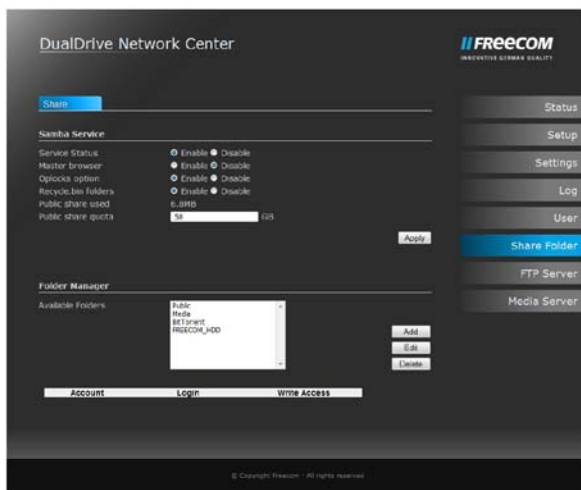
Es erscheint ein Pop up, in dem Sie den Benutzernamen, Passwort und Speicherplatz zuweisen können.



Verzeichnisfreigabe

Der Abschnitt "Verzeichnisfreigabe" gibt Ihnen die Möglichkeit, verschiedene Dienste zu aktivieren ("Enable") bzw. zu deaktivieren ("Disable"), sowie die Größe des öffentlichen (Public) Ordners zu definieren.

Außerdem wird die Ausnutzung des öffentlichen Ordners angezeigt und Sie können Ordner verwalten.



Folgende Dienste stehen Ihnen zur Verfügung:

Service Status

Aktiviert bzw. deaktiviert die SMB-Funktion.

Master Browser

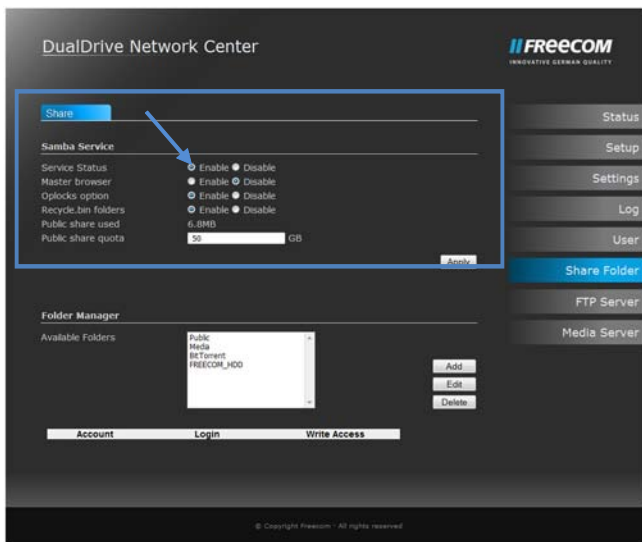
Der Master Browser verwaltet alle Computernamen im Netzwerk. In Windows-Netzwerken stellt Windows den Master Browser bereit. Im Normalfall ist die Aktivierung des Master Browsers nicht notwendig.

Oplocks Option

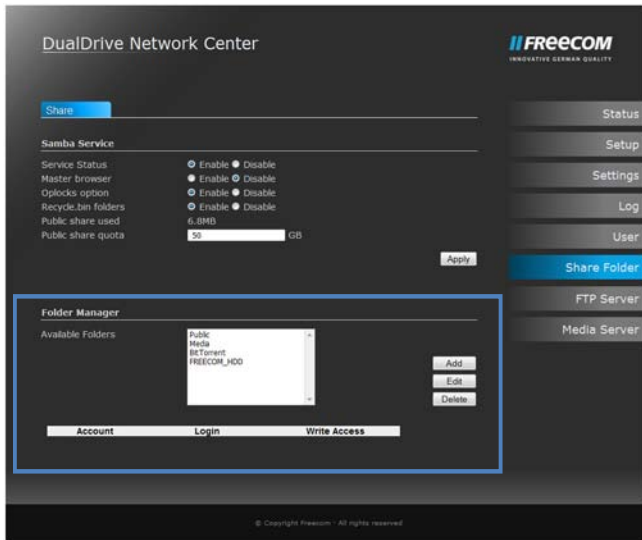
Oplocks ("Opportunistic locking") ist ein Dateispermmechanismus im SMB-Protokoll, der entwickelt wurde, um durch kontrolliertes Caching von Dateien die Performance zu verbessern.

Recycle.bin folders

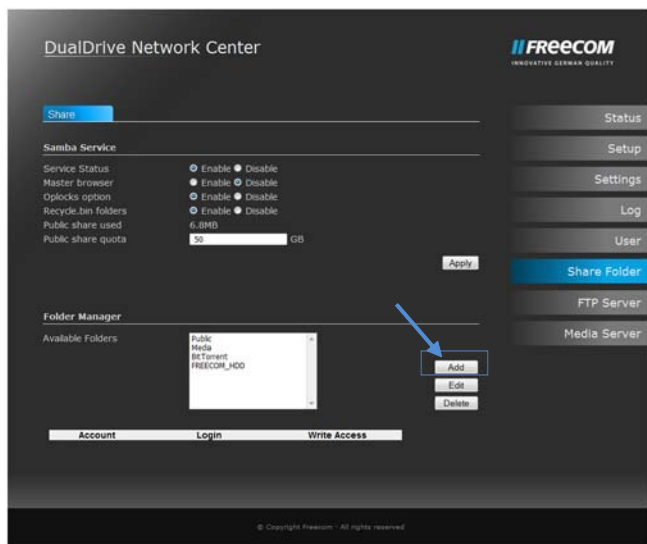
Recycle.bin Ordner in SMB-Freigaben werden angelegt bzw. nicht angelegt.



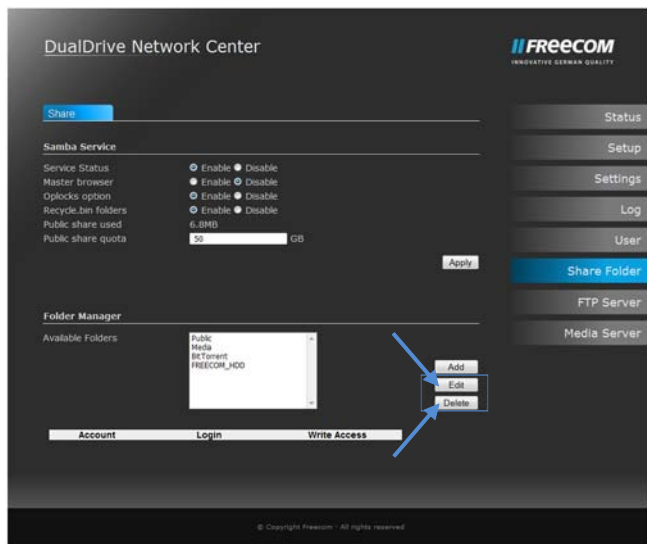
Im Folder Manager können Sie neue Ordner hinzufügen, Ordner bearbeiten oder löschen.



Klicken Sie auf "Add", um einen neuen Ordner anzulegen. Wählen Sie danach die Zugangsberechtigung aus und klicken Sie auf "Apply", um die Änderung zu übernehmen.

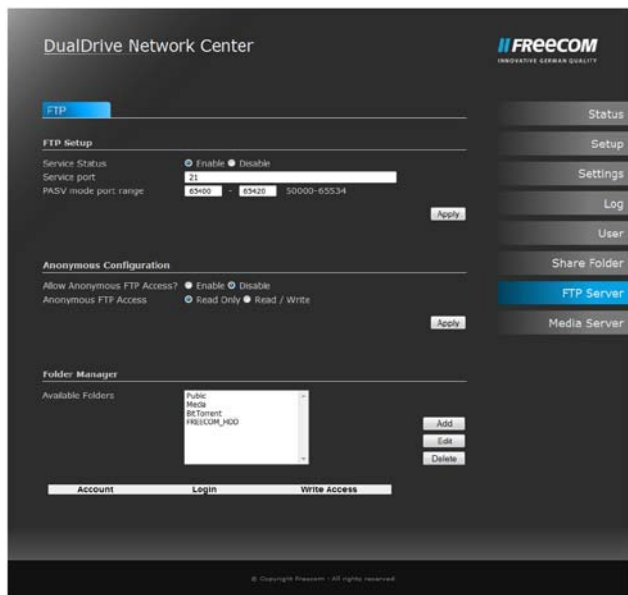


Wenn Sie auf "Edit" bzw. "Delete" klicken, können Sie die erstellten Ordner bearbeiten bzw. löschen.



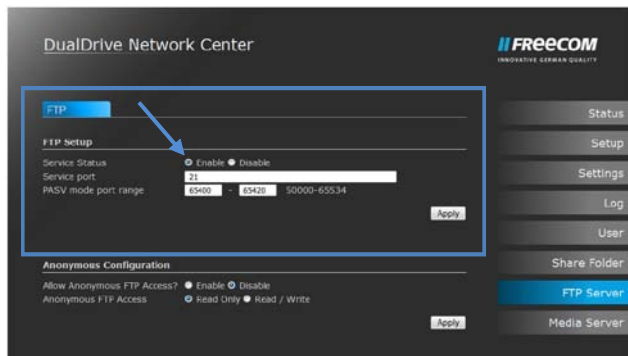
FTP Server

Der Abschnitt "FTP" gibt Ihnen die Möglichkeit, einen FTP Server einzurichten und zu verwalten.



FTP Setup

Unter FTP Setup können Sie den FTP Server aktivieren ("Enable") und deaktivieren ("Disable"), den Service Port vergeben und den Passiven Mode Port Range für den FTP Server einstellen.

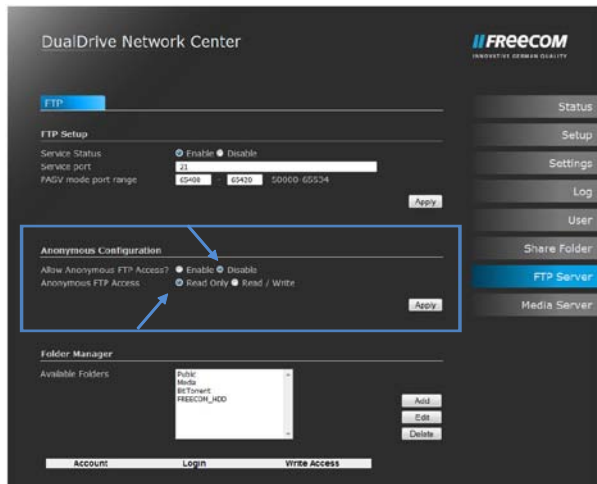


Anonymous Configuration

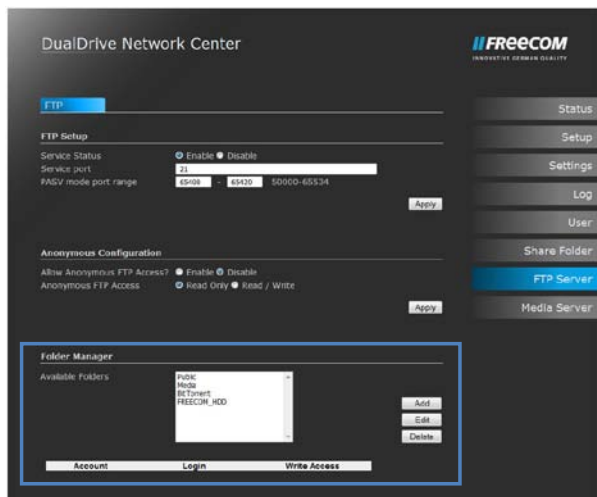
Unter "Anonymous Configuration" können Sie den FTP-Zugriff von anonymen Benutzern erlauben (enable) bzw. verweigern (disable). Außerdem können Sie festlegen, ob anonyme Benutzer Lese- und Schreibrechte haben oder ob Sie nur Leserechte auf Ihrem FTP-Server haben.

Klicken Sie auf "Apply", um die Änderungen zu übernehmen.

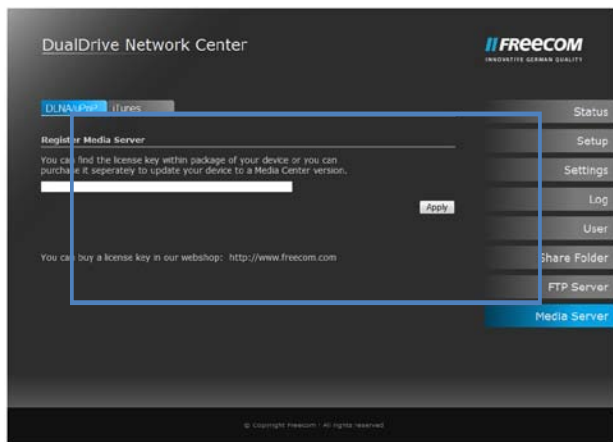
Anonyme Benutzer loggen sich mit dem Benutzernamen anonymous ein und verwenden eine Email-Adresse als Passwort.



Unter "Folder Manager" können Sie Ordner für Ihren FTP-Server freigeben, hinzufügen, bearbeiten oder löschen.



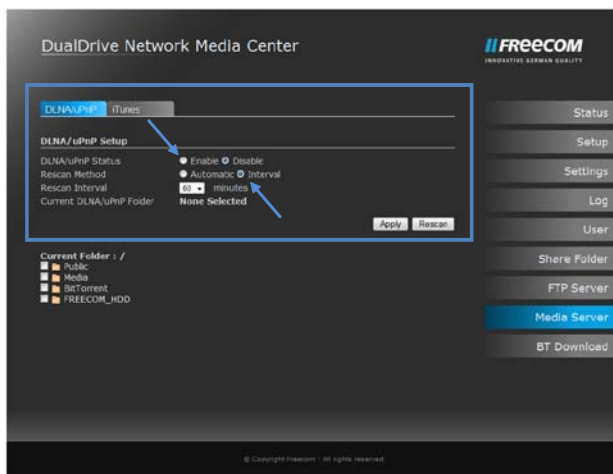
Media Server



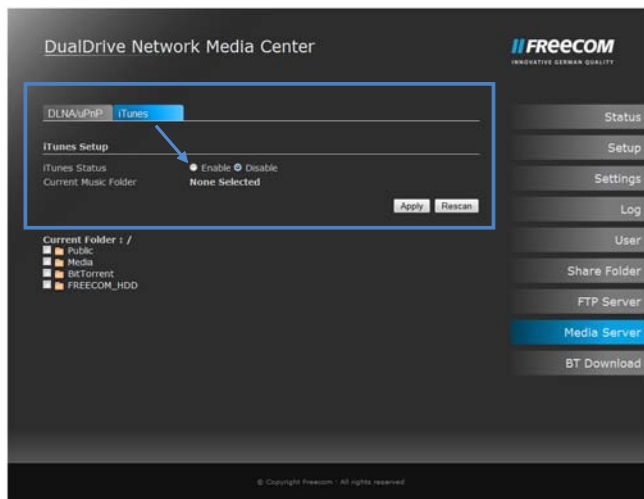
Der Abschnitt "Media Server" gibt Ihnen nach Eingabe des License Key die Möglichkeit, das Gerät als Media Server sowie den Bit Torrent Client des Gerätes zu nutzen.

DLNA/uPnP

Nach Eingabe des Keys können Sie den DLNA/uPnP Dienst nutzen und konfigurieren. Klicken Sie auf "Enable", um den Dienst zu aktivieren. Anschließend wählen Sie die Scanmethode aus. Für "Interval" müssen Sie noch unter "Rescan Interval" die Intervallzeit auswählen. Wählen Sie einen oder mehrere Ordner mit Multimediainhalten aus und klicken Sie auf "Apply", um die Änderungen zu übernehmen.

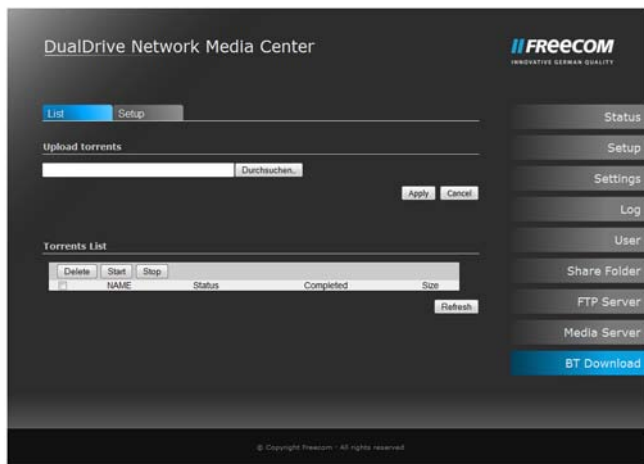


iTunes



Aktivieren Sie den Dienst, indem Sie auf "Enable" klicken. Wählen Sie einen oder mehrere Ordner mit Multimediainhalten aus und klicken Sie auf "Apply", um die Änderungen zu übernehmen. Ihre Medienfreigaben müssen sich in Unterordnern der freigegebenen Verzeichnisse befinden.

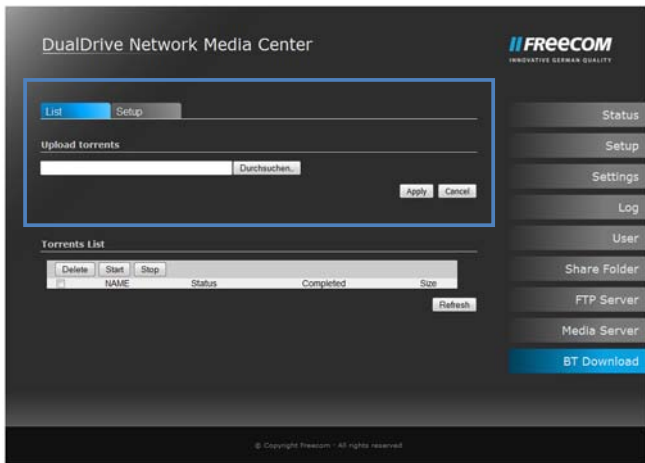
BT Download



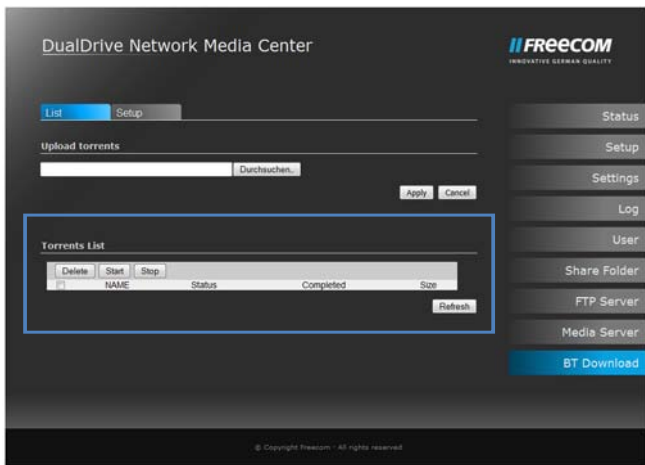
Im Abschnitt BT Download befindet sich der Bit Torrent Client des Geräts. Hier können Sie Torrent Dateien einfügen und herunterladen.

List

Unter "List" können Sie Torrentdateien hinzufügen, indem Sie bei "Upload torrents" auf "Durchsuchen" klicken. Klicken Sie danach auf "Apply", um die Änderungen zu übernehmen.



Unter "Torrent List" wird Ihnen eine Übersicht über die Torrentdateien im Bit Torrent Client angezeigt, die gerade heruntergeladen werden. Klicken Sie auf "Refresh" um die Übersicht zu aktualisieren.



Kapitel: Der Freecom Network Storage Assistant (PC/Mac)

Funktionen des Freecom Network Storage Assistant (PC)

Der Freecom Network Storage Assistant hilft Ihnen dabei, jedes Freecom Dual Drive Network Center in Ihrem Netzwerk zu finden. Wenn er ausgeführt wird, zeigt er Ihnen alle in Ihrem Netzwerk verfügbaren Freecom Dual Drive Network Centers an und unterstützt Sie beim Erstellen von Netzwerkordnern. Alle Funktionen des Freecom Network Storage Assistant können auch manuell ausgeführt werden.



Das voreingestellte Passwort und der Login für das Freecom Dual Drive Network Center sind:

Login Name: **admin**

Passwort: **admin**

Konfiguration der Grundeinstellungen Ihres Freecom Dual Drive Network Center

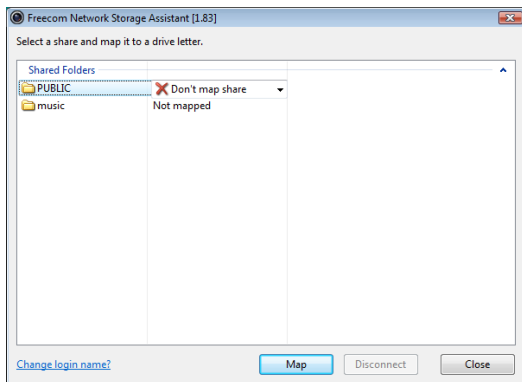
In diesem Menü können Sie Ihrem Freecom Dual Drive Network Center eine IP-Adresse, eine Subnet-Maske, einen Gerätenamen sowie einen Arbeitsgruppennamen zuweisen. Mit Hilfe dieser Informationen ist Ihr Freecom Dual Drive Network Center auch ohne den Freecom Network Storage Assistant leicht in Ihrem Netzwerk zu lokalisieren. Sie müssen Ihr Administratorpasswort eingeben, um Änderungen vornehmen zu können.

Auf das Webinterface Ihres Freecom Dual Drive Network Center zugreifen

Durch Klicken auf diesen Menüpunkt wird das Webinterface Ihres Freecom Dual Drive Network Center in Ihrem Standardbrowser geöffnet.

Netzwerklaufwerke hinzufügen und entfernen

In diesem Menü können Sie Ordnern auf Ihrem Freecom Dual Drive Network Center einen Laufwerksbuchstaben zuweisen. Dies ermöglicht einen schnelleren Zugriff auf diesen Ordner unter Windows.



Wiederherstellungsverfahren (Recovery) starten

Mit diesem Verfahren können Sie das Freecom Dual Drive Network Center auf die werksseitig voreingestellten Werte zurücksetzen, wenn Sie keinen Zugriff mehr auf das Freecom Dual Drive Network Center haben. Ihre Nutzerdaten werden dabei nicht gelöscht!

Führen Sie folgende Schritte für die Wiederherstellung aus:

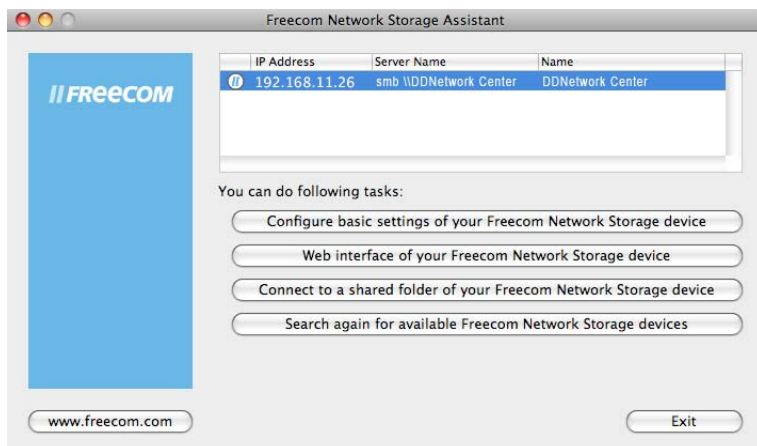
- Aktivieren Sie den Modus Wiederherstellung, indem Sie im Freecom Network Storage Assistant auf "Starten des Wiederherstellungs-Verfahrens" klicken.
- Schalten Sie das Freecom Dual Drive Network Center aus.
- Klicken Sie mit spitzen Gegenstand vorsichtig die "Reset"-Taste. Die "Reset"-Taste befindet sich neben dem Anschluss für das AC-Netzteil auf der Rückseite des Freecom Dual Drive Network Center.
- Halten Sie den "Reset"-Knopf gedrückt und schalten Sie das Gerät wieder an.
- Warten Sie ca. 1 Sekunde und lassen Sie dann den "Reset"-Knopf wieder los. Folgen Sie den Anweisungen auf dem Bildschirm.

Suche nach verfügbaren Freecom Dual Drive Network Centers wiederholen

Klicken Sie hier, um nochmals nach Ihrem Freecom Dual Drive Network Center zu suchen, wenn es nicht aufgefunden wurde. Bitte stellen Sie sicher, dass Sie Ihr Netzwerk, wie zuvor in diesem Handbuch beschrieben, eingerichtet haben und dass alle Kabel ordnungsgemäß angeschlossen sind.

Funktionen des Freecom Network Storage Assistant (Mac)

Der Freecom Network Storage Assistant hilft Ihnen dabei, jedes Freecom Dual Drive Network Center in Ihrem Netzwerk zu finden. Wenn er ausgeführt wird, zeigt er Ihnen alle in Ihrem Netzwerk verfügbaren Freecom Dual Drive Network Centers an und unterstützt Sie bei der Konfiguration des Freecom Dual Drive Network Center und dem Erstellen von Netzwerkordnern. Alle Funktionen des Freecom Network Storage Assistant können auch manuell ausgeführt werden.



Das voreingestellte Passwort und der Login für das Freecom Dual Drive Network Center sind:

Login Name: admin

Passwort: admin

Grundeinstellungen des Gerätes konfigurieren

In diesem Menü können Sie Ihrem Freecom Dual Drive Network Center eine IP-Adresse, eine Subnet-Maske, einen Gerätenamen sowie einen Arbeitsgruppennamen zuweisen. Mit Hilfe dieser Informationen ist Ihr Freecom Dual Drive Network Center auch ohne den Freecom Network Storage Assistant leicht in Ihrem Netzwerk zu lokalisieren. Sie müssen Ihr Administratorpasswort eingeben, um Änderungen vornehmen zu können.

Webseite Ihres Freecom Network Storage Gerätes

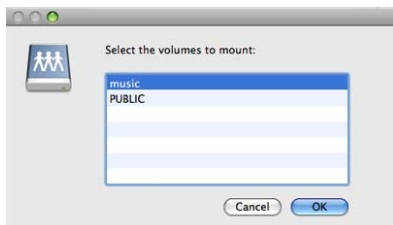
Durch Klicken auf diesen Menüpunkt wird das Webinterface Ihres Freecom Dual Drive Network Center in Ihrem Standardbrowser geöffnet.

Verbinden mit einem freigegebenen Verzeichnis

In diesem Menü können Sie Ordner Ihres Freecom Dual Drive Network Center auf Ihrem Mac mounten. Dies ermöglicht einen schnelleren Zugriff auf diese Ordner.



Mac OS X 10.4



Mac OS X 10.5

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1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

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2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

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- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.
(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

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Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a „work that uses the Library“. Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a „work that uses the Library“ with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a „work that uses the library“. The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a „work that uses the Library“ uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a „work that uses the Library“ with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

- a) Accompany the work with the complete corresponding machine-readable source code for the Library including

whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable „work that uses the Library“, as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

- b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.
- c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.
- d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.
- e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the „work that uses the Library“ must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

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Version 2, June 1991

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[This is the first released version of the library GPL. It is numbered 2 because it goes with version 2 of the ordinary GPL.]

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Most GNU software, including some libraries, is covered by the ordinary GNU General Public License, which was designed for utility programs. This license, the GNU Library General Public License, applies to certain designated libraries. This license is quite different from the ordinary one; be sure to read it in full, and don't assume that anything in it is the same as in the ordinary license.

The reason we have a separate public license for some libraries is that they blur the distinction we usually make between modifying or adding to a program and simply using it. Linking a program with a library, without changing the library, is in some sense simply using the library, and is analogous to running a utility program or application program. However, in a textual and legal sense, the linked executable is a combined work, a derivative of the original library, and the ordinary General Public License treats it as such.

Because of this blurred distinction, using the ordinary General Public License for libraries did not effectively promote software sharing, because most developers did not use the libraries. We concluded that weaker conditions might promote sharing better.

However, unrestricted linking of non-free programs would deprive the users of those programs of all benefit from the free status of the libraries themselves. This Library General Public License is intended to permit developers of non-free programs to use free libraries, while preserving your freedom as a user of such programs to change the free libraries that are incorporated in them. (We have not seen how to achieve this as regards changes in header files, but we have achieved it as regards changes in the actual functions of the Library.) The hope is that this will lead to faster development of free libraries.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a „work based on the library“ and a „work that uses the library“. The former contains code derived from the library, while the latter only works together with the library.

Note that it is possible for a library to be covered by the ordinary General Public License rather than by this special one.

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A „library“ means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The „Library“, below, refers to any such software library or work which has been distributed under these terms. A „work based on the Library“ means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term „modification“.)

„Source code“ for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

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2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

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3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

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This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a „work that uses the Library“. Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a „work that uses the Library“ with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a „work that uses the library“. The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a „work that uses the Library“ uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also compile or link a „work that uses the Library“ with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

- a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable „work that uses the Library“, as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)
- b) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.
- c) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.
- d) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

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It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

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